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| 09/680,400 | 10/05/2000 | Taku Ichiryu | 198045US3 | 1882 |

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OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

VERDIER, CHRISTOPHER M

| | |
|----------|--------------|
| ART UNIT | PAPER NUMBER |
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3745

DATE MAILED: 01/14/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/680,400

Applicant(s)

ICHIRYU, TAKU

Examiner

Christopher Verdier

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2002.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2002 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 02 July 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on November 25, 2002 has been entered. Claims 1-4 are pending.

The specification has been amended to correct the informality set forth in the previous Office action. The claims have been amended to correct the informalities set forth in the previous Office action. Claims 1 and 4 have been amended to overcome the rejections under 35 USC 112, second paragraph set forth in the previous Office action. Correction of the above matters is noted with appreciation. The formal drawings filed November 25, 2002 have not been approved by the examiner because they do not incorporate the Proposed Drawing Changes of July 2, 2002, which label figures 3A and 7-9 as "Prior Art".

Applicant has argued that claim 1 has been amended to recite that the bolt holes extend tangentially in the casing walls, and that Swiss Patent 171,458 does not show such a feature, and that claim 1 should no longer be rejected under 35 USC 102(b) as being anticipated by the Swiss Patent '458. This argument is agreed with, however the teachings of Swiss Patent 171,458 are applicable under 35 USC 103 as set forth later below.

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Applicant's arguments that Walsh and Applicant's Prior Art Figure 7 disclose a split case with mating flanges or plates disposed at the exterior of the casing, while claims 1 and 2 require that the bolt holes extend tangentially in the casing walls, are agreed with. The rejections under 35 USC 103 based upon these references are withdrawn.

With regard to the rejection of claims 1-4 as under 35 USC 103 as being unpatentable over Applicant's Prior Art Figure 8 in view of Swiss Patent 171,458, Applicant has argued that the Swiss Patent '458 discloses bolt holes disposed in the flanges and not tangentially in the casing walls. Applicant's above characterization of the Swiss Patent '171 is correct, however one of ordinary skill in the art would not limit the teachings of Swiss Patent '171 to only bolt holes that are disposed in the casing walls in a direction tangential to the casing walls, because bolt holes that are disposed in casing walls as opposed to bolt holes that are disposed in flanges are nearly structurally identical, with the exception of the physical location of the bolt holes. One of ordinary skill in the art would have readily recognized that the teachings of Swiss Patent '171 may be applied to bolt holes that are disposed in the casing walls in a direction tangential to the casing walls, due to the nearly identical structure. As set forth later below in the rejection under 35 USC 103, the motivation for combining the teachings of the Swiss Patent with a casing is for the purpose of reducing leaking by preventing the expansion differences between the bolts, nuts, and casings (which are high temperature pipes) from permanently changing the form of the bolts, nuts, or casings, and because the Swiss Patent is from the analogous art of high temperature pipe joints, one of ordinary skill in the art would have looked to the art of high

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temperature pipe joints in order to solve the problem of differential thermal expansion in high temperature hydraulic casings.

Applicant has argued that Applicant's Prior Art Figure 8 illustrates a problem arising with tangential bolt holes in flangeless pipe casings, namely unnecessary thinning of the casing due to large bolt hole diameters, and that the high strength sleeve of the present application overcomes such a problem by permitting a smaller bolt hole size and overcomes a problem unique to tangential bolt holes, and that there is thus a synergy for use of a sleeve in a tangential bolt hole which is evidence of unobviousness. These arguments are not persuasive, because the claims do not recite overcoming thinning of the casing due to large bolt hole diameters by using a sleeve which permits a smaller bolt hole size. Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993). With regard to Applicant's argument that there is thus a synergy for use of a sleeve in a tangential bolt hole which is evidence of unobviousness, this argument is not persuasive. MPEP 2141 states that the standard of patentability to be applied in obviousness rejections is that set forth in *Graham v. John Deere*, 383 U.S. 1, 148 USPQ 459 (1966), and that nowhere did the Supreme Court state that a "new or different function" and "synergistic result" test supersede a finding of nonobviousness or obviousness under the *Graham* test. The CAFC in *Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1540, 218 USPQ 871, 880 (Fed. Cir 1983) stated that "A requirement for 'synergism' or a 'synergistic effect' is nowhere found in the statute, 35 U.S.C. When present, for example in a chemical case, synergism may point toward nonobviousness, but its absence has no place in

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evaluating the evidence on obviousness. The more objective findings suggested in *Graham*, supra, are drawn from the language of the statute and are fully adequate guidelines for evaluating the evidence relating to compliance with 35 U.S.C. § 103. *Bowser Inc. v. United States*, 388 F.2d 346, 156 USPQ 406 (Ct. Cl. 1967)."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Prior Art Figure 8 in view of Swiss Patent 171,457. Applicant's Prior Art Figure 8 discloses a fastening arrangement for a horizontally split casing for a hydraulic machine substantially as claimed including first 210a and second 220a casing halves joined together by joining joint faces, with the first and second casing halves being provided with bolt holes 210c, 220c that are aligned with each other when the first and second casing halves are assembled, to form a continuous bolt hole crossing the joint. The bolt hole 220C in the second casing half is internally threaded. However, Applicant's Prior Art Figure 8 does not disclose that the bolt hole in the first casing half is provided with an internal screw thread with a sleeve having an external screw thread that is fitted into the bolt hole of the first casing half and engages the internal screw thread

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of the bolt hole of the first casing half, with a fastening bolt having fastening means at the portion apart from the external screw thread, with the fastening means abutting an end of the sleeve opposite to the joint face when the fastening bolt is screwed into the bolt hole of the second casing half, with tensile force being generated in the fastening bolt, with an external screw thread being provided on a shaft of the fastening bolt and a nut engaging the external screw thread acting as the fastening element for abutting the end face of the sleeve.

Swiss Patent 171,458 (figure 1) shows a fastening arrangement for a horizontally split casing including first 3 and second 4 casing halves joined together by joining joint faces, with the first 3 and second 4 casing halves being provided with unnumbered bolt holes that are aligned with each other when the first and second casing halves are assembled, to form a continuous bolt hole crossing the joint. The bolt holes in the first and second casing halves are provided with internal screw threads with a sleeve 9 having an external screw thread that is fitted into the bolt hole of the first casing half and engages the internal screw thread of the bolt hole of the first casing half, with a fastening bolt 5 having an external screw thread at one end that engages the internal screw thread of the bolt hole in the second casing half and fastening means 6 at the portion apart from the external screw thread, with the fastening means abutting an end of the sleeve opposite to the joint face when the fastening bolt is screwed into the bolt hole of the second casing half, with tensile force being generated in the fastening bolt, with an external screw thread 8 being provided on a shaft of the fastening bolt and a nut engaging the external screw thread acting as the fastening element for abutting the end face of the sleeve, for the purpose of reducing leaking by preventing the expansion differences between the bolts, nuts, and

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casings (which are high temperature pipes) from permanently changing the form of the bolts, nuts, or casings.

The Swiss Patent is from the analogous art of high temperature pipe joints, and one of ordinary skill in the art would have looked to the art of high temperature pipe joints in order to solve the problem of differential thermal expansion in high temperature hydraulic casings. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the casings of Applicant's Prior Art Figure 8 with the fastening and sleeve arrangement of the Swiss Patent, for the purpose of reducing leaking by preventing the expansion differences between the bolts, nuts, and casings from permanently changing the form of the bolts, nuts, or casings.

With regard to claim 3, which recites an enlarged diameter portion integrally formed on a shaft portion of the fastening bolt acting as the fastening means for abutting the end face of the sleeve, Official Notice is taken that bolts having hex heads at one end and a threaded shank at the other end are old and well-known in the art for the purpose of joining members together. Therefore, it would have been obvious to a person having ordinary skill in the art to replace the bolt 5 and nut 6 arrangement taught by the Swiss Patent 171,458 with a bolt having a hex head, such that the hex head replaces the nut 6, for the purpose of joining the casings together.

Claims 1-4 are also rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent 58-138,207 in view of Swiss Patent 171,457. Japanese Patent 58-138,207 (figures 1-2)

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discloses a fastening arrangement for a horizontally split casing for a hydraulic machine substantially as claimed including first 5a and second 5b casing halves joined together by joining joint faces 9, with the first and second casing halves being provided with bolt holes (unnumbered, near 10) that are aligned with each other when the first and second casing halves are assembled, to form a continuous bolt hole crossing the joint. The bolt hole in the second casing half 5b is internally threaded. However, Japanese Patent 58-138,207 does not disclose that the bolt hole in the first casing half is provided with an internal screw thread with a sleeve having an external screw thread that is fitted into the bolt hole of the first casing half and engages the internal screw thread of the bolt hole of the first casing half, with a fastening bolt having fastening means at the portion apart from the external screw thread, with the fastening means abutting an end of the sleeve opposite to the joint face when the fastening bolt is screwed into the bolt hole of the second casing half, with tensile force being generated in the fastening bolt, with an external screw thread being provided on a shaft of the fastening bolt and a nut engaging the external screw thread acting as the fastening element for abutting the end face of the sleeve.

Swiss Patent 171,458 (figure 1) shows a fastening arrangement for a horizontally split casing including first 3 and second 4 casing halves joined together by joining joint faces, with the first 3 and second 4 casing halves being provided with unnumbered bolt holes that are aligned with each other when the first and second casing halves are assembled, to form a continuous bolt hole crossing the joint. The bolt holes in the first and second casing halves are provided with internal screw threads with a sleeve 9 having an external screw thread that is fitted into the bolt hole of the first casing half and engages the internal screw thread of the bolt hole of

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the first casing half, with a fastening bolt 5 having an external screw thread at one end that engages the internal screw thread of the bolt hole in the second casing half and fastening means 6 at the portion apart from the external screw thread, with the fastening means abutting an end of the sleeve opposite to the joint face when the fastening bolt is screwed into the bolt hole of the second casing half, with tensile force being generated in the fastening bolt, with an external screw thread 8 being provided on a shaft of the fastening bolt and a nut engaging the external screw thread acting as the fastening element for abutting the end face of the sleeve, for the purpose of reducing leaking by preventing the expansion differences between the bolts, nuts, and casings (which are high temperature pipes) from permanently changing the form of the bolts, nuts, or casings.

The Swiss Patent is from the analogous art of high temperature pipe joints, and one of ordinary skill in the art would have looked to the art of high temperature pipe joints in order to solve the problem of differential thermal expansion in high temperature hydraulic casings. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to form the casings of Japanese Patent 58-138,207 with the fastening and sleeve arrangement of the Swiss Patent, for the purpose of reducing leaking by preventing the expansion differences between the bolts, nuts, and casings from permanently changing the form of the bolts, nuts, or casings.

With regard to claim 3, which recites an enlarged diameter portion integrally formed on a shaft portion of the fastening bolt acting as the fastening means for abutting the end face of the

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sleeve, Official Notice is taken that bolts having hex heads at one end and a threaded shank at the other end are old and well-known in the art for the purpose of joining members together.

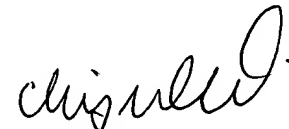
Therefore, it would have been obvious to a person having ordinary skill in the art to replace the bolt 5 and nut 6 arrangement taught by the Swiss Patent 171,458 with a bolt having a hex head, such that the hex head replaces the nut 6, for the purpose of joining the casings together.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher Verdier whose telephone number is (703)-308-2638. The examiner can normally be reached on Monday-Friday from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward K. Look can be reached on (703) 308-1044. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9302 for regular communications and (703) 872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0861.

C.V.
January 13, 2003


Christopher Verdier
Primary Examiner
Art Unit 3745